

Latest virtual reality technology makes opera even more magical

October 11 2017



Screen shot from the Magic Butterfly experience. Credit: Welsh National Opera

The latest motion capture technology has been used to create an immersive virtual reality (VR) opera experience that is touring venues across England and Wales.

Computer scientists from CAMERA, the University of Bath's motion capture research centre worked with award-winning VR/AR content

production agency, REWIND, on the project for Welsh National Opera (WNO).

Visitors enter a specially designed shipping container and don a Google Daydream View VR headset to be immersed into scenes from the operas *Madam Butterfly* and *The Magic Flute*.

Called the Magic Butterfly VR Experience, it combines high quality imagery and sounds and allows viewers to interact with the performance in 3D.

The project involved capturing body and face motion data from world renowned soprano, Karah Son, whilst she performed the much-loved aria, 'Un Bel Di,' from Puccini's opera, *Madam Butterfly*.

The capture involved finding a solution to capturing the fluttering movement of the sleeves on the digital *Madam Butterfly* avatar's kimono.

As cloth simulations can be problematic in real time, CAMERA Head of Studio, Martin Parsons, found a novel solution involving attaching netting with light-reflecting markers to Karah's arms to simulate the movement of the fabric.

Parsons commented: "The solution worked really well and provided an invaluable insight into how the fabric movement will look when fully rendered in the environment. The final WNO project is an immersive, stylised and very beautiful virtual reality experience of the aria performed by Karah Son."

David Massey Digital Producer at Welsh National Opera said: "It was a pleasure working with CAMERA on our Magic Butterfly experience.

"The team at CAMERA have helped us deliver our vision by translating Karah's spellbinding performance into VR.

"One of our aims was is to see if audiences could emotionally respond to Karah's performance as she performs as an avatar - the initial response has been overwhelmingly positive and in part we have CAMERA to thank for helping us to realise this pioneering piece of theatre."

Greg Furber, VR Director at REWIND, said: "CAMERA was the perfect team to partner with on the creation of the Madam Butterfly VR experience.

"Their assistance in solving the performance's unique challenges was invaluable and helped us make a captivating VR experience that brings a classic performance from the stage into the virtual world, offering a unique performance of Madam Butterfly."

People can visit the free experience at Cardiff Bay until 14 October, which will then be viewed at Birmingham Hippodrome Square between 30 October - 5 November at the Albert Dock in Liverpool from 9-12 November, finishing the tour at the Victoria & Albert Museum from 19-21 January 2018. For more details visit:

<https://www.wno.org.uk/event/magic-butterfly-vr-experience>



Soprano Karah Son, performing as Madam Butterfly for Welsh National Opera.
Credit: Jeremy Abrahams

Provided by University of Bath

Citation: Latest virtual reality technology makes opera even more magical (2017, October 11)
retrieved 28 April 2024 from

<https://phys.org/news/2017-10-latest-virtual-reality-technology-opera.html>

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